

(43) International Publication Date
4 August 2005 (04.08.2005)

PCT

(10) International Publication Number
WO 2005/070712 A3

- (51) **International Patent Classification:**
B60H 1/32 (2006.01)
- (21) **International Application Number:**
PCT/JP2004/019271
- (22) **International Filing Date:**
16 December 2004 (16.12.2004)
- (25) **Filing Language:** English
- (26) **Publication Language:** English
- (30) **Priority Data:**
2004-014200 22 January 2004 (22.01.2004) JP
- (71) **Applicant** (*for all designated States except US*): CAL-
SONIC KANSEI CORPORATION [JP/JP]; 24-15, Mi-
namidai 5-chome, Nakano-ku, Tokyo 1648602 (JP).
- (72) **Inventors; and**
- (75) **Inventors/Applicants** (*for US only*): NAKAMURA, Ko-
jiro. MARUYAMA, Tomohiro.
- (74) **Agents:** MIYOSHI, Hidekazu et al.; Toranomom Koto-
hira Tower, 2-8, Toranomom 1-chome, Minato-ku, Tokyo
105-0001 (JP).

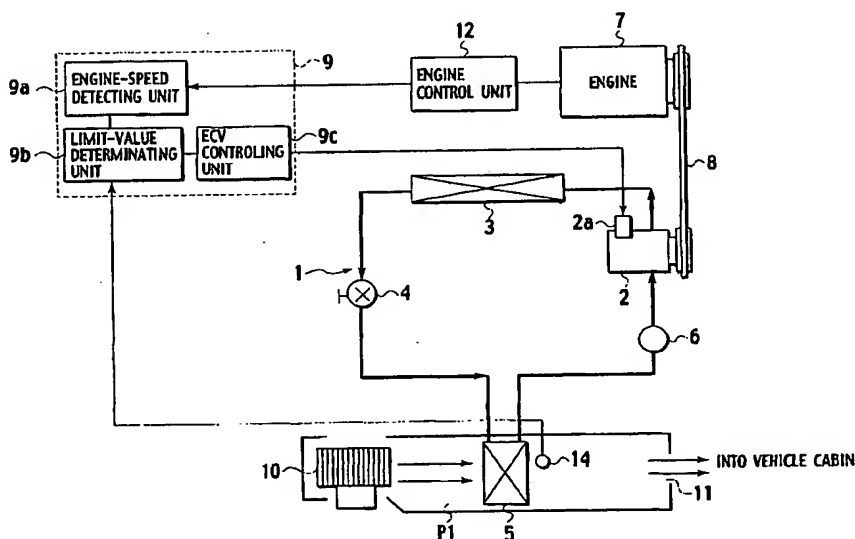
- (81) Designated States (unless otherwise indicated, for every kind of national protection available):** AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MY, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available):** ARIPO (BW, GI, GM, KE, LS, MW, MZ, NA, SD, SI, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:
— with international search report

- (88) **Date of publication of the international search report:**
2 August 2007

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

- (54) Title: METHOD AND DEVICE FOR CONTROLLING REFRIGERATION CYCLE OF AIR CONDITIONING SYSTEM FOR VEHICLE**



- (57) Abstract:** In an, air conditioning system having a variable displacement compressor (2) driven by an engine (7) of a vehicle, method and device for controlling a refrigeration cycle are provided to ensure necessary cooling performance of the system without damaging the traveling performance of the vehicle. In the method, a limit value in the discharge rate of the variable displacement compressor (2) is determined by an engine speed (12) or a variable related to the engine speed. The variable displacement compressor is controlled (9, 2a) on the basis of the limit value.